CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/KNRK/W.No.07/CSR-03/293d/CEMENT/2016-17 Date: 13.03.2017

TEST REPORT ON CEMENT

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560 064.
*** Name of Work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	Cement
Sample Received on	:	10.03.2017
Period of Testing	:	10.03.2017 to 13.03.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	29.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	475 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

AE.W.7
Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.,
Bangalore.

Civil-Tech Consultants & Engineers Bangalore

Note:

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⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

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VIDYARANI P.K.
Technical Manager

AE(W7)

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KNRK/W.No.07/CSR-03/293d/SAND-Gradation/2016-17 13.03.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560 064.
*** Name of Work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	Fine Aggregates
Technical Reference	:	IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	:	10.03.2017
Date of Testing	:	13.03.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	93.70	90-100	90-100	90-100	95-100
2.36	72.30	60-95	75-100	85-100	95-100
1.18	49.60	30-70	55-90	75-100	90-100
600 Micron	24.00	15-34	35-59	60-79	80-100
300 Micron	12.20	5-20	8-30	12-40	15-50
150 Micron	4.30	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Assistant Executive Engineer, Kodigehalli Sub Division, Yelahanka Zone, B.B.M.P., Bangalore.

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VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KNRK/W.No.07/CSR-03/293d/AGG/GR/2016-17 13.03.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560 064.
*** Name of Work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	Coarse Aggregates (40mm)
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	10.03.2017
Date of Testing	:	13.03.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.90	95-100	85-100
20	42.10	30-70	0-20
10	15.60	10-35	0-5
4.75	3.40	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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Civil-Tech Consultants & Engineers Bangalore

Assistant Executive Engineer, Kodigehalli Sub Division, Yelahanka Zone, B.B.M.P., Bangalore.

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VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KNRK/W.No.07/Steel/2016-17 14.03.2017

TEST REPORT ON REINFORCEMENT STEEL

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560 064.
*** Name of work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Samples ID**	:	8mm Bar
Technical Reference	:	IS: 1786-2008
Date of Testing	:	14.03.2017

Sl No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm2	Tensile strength (Ultimate stress) N/mm2	Elongation percent gauge length		
1	8	0.39	511	513	13.10	O.K	O.K

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Civil-Tech Consultants & Engineers Bangalore

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

AE(LA)

****

Civil-tech Consultants & Engineers
#23/14, 7th Cross, 3rd Stage. 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

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JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/KNRK/W.No.07/Steel/2016-17 14.03.2017

TEST REPORT ON REINFORCEMENT STEEL

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560 064.
* Name of work	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
* Reference	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
* Samples ID	:	10 mm Bar
Technical Reference	:	IS: 1786-2008
Date of Testing	:	14.03.2017

Sl No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm2	Tensile strength (Ultimate stress) N/mm2	Elongation percent gauge length		
1	10	0.62	512	514	13.45	O.K	O.K

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Assistant Executive Engineer, Kodigehalli Sub Division, Yelahanka Zone, B.B.M.P., Bangalore. K.N.D

AE(W)

****

Civil-tech Consultants & Engineers
#23/14, 7th Cross, 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

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T-2377

Job No.: CTCE/BBMP/KNRK/W.No.07/CSR-03/293d/Cube/2016-17 15.04.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560
*** Name of the work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	RCC Drain Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	15.04.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	18.03.2017	15.04.2017	8.267	491.8	21.86
2	18.03.2017	15.04.2017	8.123	488.2	21.70
3	18.03.2017	15.04.2017	8.394	513.6	22.83

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VIDYARANI P.K.
Technical Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560
*** Name of the work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	RCC Drain Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	15.04.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	18.03.2017	15.04.2017	8.367	515.4	22.91
2	18.03.2017	15.04.2017	8.285	499.3	22.19
3	18.03.2017	15.04.2017	8.465	523.9	23.28

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Assistant Executive Engineer, Kodigehalli Sub Division, Yelahanka Zone, B.B.M.P., Bangalore.

VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KNRK/W.No.07/CSR-03/293d/Cube/2016-17 17.04.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560
*** Name of the work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	RCC Drain Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	17.04.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.03.2017	17.04.2017	8.157	502.3	22.32
2	20.03.2017	17.04.2017	8.263	514.2	22.85
3	20.03.2017	17.04.2017	8.394	525.8	23.37

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Technical Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

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*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560
*** Name of the work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	RCC Drain Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	17.04.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.03.2017	17.04.2017	8.157	493.5	21.93
2	20.03.2017	17.04.2017	8.293	506.2	22.50
3	20.03.2017	17.04.2017	8.354	518.7	23.05

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Technical Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

AE(W)

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KNRK/W.No.07/CSR-03/293d/Pre Slab/2016-17 23.03.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CORE

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K.N. Ravi Kumar,** #905, M Block, Near Mother Dairy, Yelahanka New Town, Bangalore – 560 064.
*** Name of work**	:	Construction of drains in Hoodi Munishamappa Layout in Ward No.07, Byatarayanapura, BBMP, Bangalore.
*** Reference**	:	AEE/KSD/PR/186/2016-17 Dated: 10.03.2017
*** Sample ID**	:	Precast Slab
*** Grade of Concrete**	:	M_{20}
Techinical Reference	:	IS:516-1959 (RA- 2013), SP-24:1983.
Sample Received on	:	18.03.2017
Date of Testing	:	23.03.2017

Sl. No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	78.00	0.385	2513.83	1.56	0.952	31.35	15.97	17.24	18.10	22.63
2	50.00	80.00	0.399	2540.11	1.60	0.957	32.50	16.55	17.88	17.10	21.38
3	50.00	81.00	0.402	2527.62	1.62	0.959	33.85	17.24	18.62	17.85	22.32

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